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59. (NEW) The receptor of claim 52, wherein said receptor comprises a mutation at position X<sub>4</sub> of said amino acid motif to Arg or to Lys.

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### REMARKS

Claims 1-14 and 43 were pending in the application. New claims 44-59 have been added. Upon entry of this amendment, claims 1-14 and 43-59 will be pending. For the Examiner's convenience, the currently pending claims are set forth in Appendix A. Support for new claims 44-59 may be found throughout the specification, including the originally filed claims. Specifically, support for claim 44 can be found at least at page 65, lines 13-19 of the specification; support for claims 45 and 54 can be found at least at page 7, lines 5-10 of the specification; support for claims 46 and 55 can be found at least at page 7, lines 31-33 of the specification; support for claims 47 and 56 can be found at least at page 7, lines 33-34 of the specification; support for claims 48 and 57 can be found at least at page 7, lines 10-12 of the specification; support for claims 49 and 58 can be found at least at page 7, lines 36-37 of the specification; support for claims 50 and 59 can be found at least at page 7, lines 36-38 of the specification; support for claim 51 can be found at least at page 8, lines 5-6 of the specification; support for claim 52 can be found at least at page 8, lines 15-41 and at page 67, lines 24-36 of the specification; and support for claim 53 can be found at least at page 8, lines 12-14 of the specification.

No new matter has been added. Any amendments to and/or cancellation of the claims was done solely for the purpose of expediting prosecution of the present application. Applicant reserves the right to pursue the subject matter of the claims as originally filed in this or a separate application(s).

### CONCLUSION

In view of the foregoing amendments and foregoing remarks, it is respectfully submitted that the application is in condition for allowance. If a telephone conversation with Applicants' Attorney would expedite the prosecution of the above-identified application, the Examiner is urged to call Applicants' Attorney at (617) 227-7400.

Respectfully submitted

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**VERSION WITH MARKINGS TO SHOW CHANGES MADE**

44. (NEW) A mutant mammalian IL8A receptor having an amino acid sequence which differs from a wild type IL8A receptor having a wild type amino acid sequence comprising an amino acid motif (X<sub>1</sub>X<sub>2</sub>X<sub>3</sub>X<sub>4</sub>) proximal to the carboxy terminal end of said wild type amino acid sequence, wherein:

X<sub>1</sub> denotes an amino acid residue at position 1 of said motif and is selected from the group consisting of Phe, Leu, Val, and Tyr;

X<sub>2</sub> denotes an amino acid residue at position 2 of said motif and is selected from the group consisting of Phe, Lys and Gln;

X<sub>3</sub> denotes an amino acid residue at position 3 of said motif and is selected from the group consisting of Leu, Arg, Glu, Asn, Gln, Ser, Ala, Leu ; and

X<sub>4</sub> denotes an amino acid residue at position 4 of said motif and is selected from the group consisting of Ala, Cys, Asp, Glu, Gly, Ser, Thr and Tyr; and

wherein said mutant receptor comprises a seventh transmembrane domain with a carboxy terminal end; and

at least one point mutation at a position in said amino acid motif, wherein said point mutation is selected from the group consisting of: Arg to Trp at position 73, Met to Ile at position 246, and Gly to Arg at position 320, wherein upon interaction with a ligand to modulate a signal transduction pathway in a cell, a signal generated by said mutant receptor is greater than a signal generated upon interaction of said ligand with a wild type IL8A receptor.

45. (NEW) The receptor of claim 44, wherein said cell is a yeast cell.

46. (NEW) The receptor of claim 45, wherein said receptor acts as a surrogate for an endogenous yeast pheromone receptor in a pheromone response pathway of said cell.

47. (NEW) The receptor of claim 45, wherein said cell belongs to the species *Saccharomyces cerevisiae*.

48. (NEW) The receptor of claim 44, wherein said cell is a mammalian cell.

49. (NEW) The receptor of claim 44, wherein said receptor containing said amino acid motif with no point mutation therein generates no detectable signal.

50. (NEW) The receptor of claim 44, wherein said point mutation comprises mutagenization at position 4 of said amino acid motif to Arg or to Lys.

51. (NEW) The receptor of claim 44, wherein said ligand is interleukin 8 (IL8) or melanoma growth-stimulating activity-alpha (MGSA/GRO $\alpha$ ).

52. (NEW) A mutant galanin receptor-1 having an amino acid sequence which differs from a wild type galanin receptor-1 having a wild type amino acid sequence comprising an amino acid motif (X<sub>1</sub>X<sub>2</sub>X<sub>3</sub>X<sub>4</sub>) proximal to the carboxy terminal end of said wild type amino acid sequence, wherein:

X<sub>1</sub> denotes an amino acid residue at position 1 of said motif and is selected from the group consisting of Phe, Leu, Val, and Tyr;

X<sub>2</sub> denotes an amino acid residue at position 2 of said motif and is selected from the group consisting of Phe, Lys and Gln;

X<sub>3</sub> denotes an amino acid residue at position 3 of said motif and is selected from the group consisting of Leu, Arg, Glu, Asn, Gln, Ser, Ala, Leu ; and

X<sub>4</sub> denotes an amino acid residue at position 4 of said motif and is selected from the group consisting of Ala, Cys, Asp, Glu, Gly, Ser, Thr and Tyr, and

wherein said mutant receptor comprises a seventh transmembrane domain with a carboxy terminal end; and

at least one point mutation in said amino acid motif comprising Gly to Ala at position 320, wherein upon interaction with a ligand to modulate a signal transduction pathway in a cell, a signal generated by said mutant receptor is greater than a signal generated upon interaction of said ligand with a wild type galanin receptor-1.

53. (NEW) A mutant galanin receptor-1 having an amino acid sequence which differs from a wild type galanin receptor-1 having a wild type amino acid sequence comprising an amino acid motif (X<sub>1</sub>X<sub>2</sub>X<sub>3</sub>X<sub>4</sub>) proximal to the carboxy terminal end of said wild type amino acid sequence, wherein:

X<sub>1</sub> denotes an amino acid residue at position 1 of said motif and is

Phe;

X<sub>2</sub> denotes an amino acid residue at position 2 of said motif and is

Arg;

X<sub>3</sub> denotes an amino acid residue at position 3 of said motif and is

Lys; and

X<sub>4</sub> denotes an amino acid residue at position 4 of said motif and is selected from the group consisting of Lys and Arg;

wherein said mutant receptor comprises a seventh transmembrane domain with a carboxy terminal end; and

wherein upon interaction with a ligand to modulate a signal transduction pathway in a cell, a signal generated by said mutant receptor is greater than a signal generated upon interaction of said ligand with a wild type galanin receptor-1.

54. (NEW) The receptor of claims 52 or 53, wherein said cell is a yeast cell.

55. (NEW) The receptor of claim 54, wherein said receptor acts as a surrogate for an endogenous yeast pheromone receptor in a pheromone response pathway of said cell.

56. (NEW) The receptor of claim 54, wherein said cell belongs to the species *Saccharomyces cerevisiae*.

57. (NEW) The receptor of claims 52 or 53, wherein said cell is a mammalian cell.

58. (NEW) The receptor of claim 52, wherein said receptor containing said amino acid motif with no point mutation therein generates no detectable signal.

59. (NEW) The receptor of claim 52, wherein said receptor comprises a mutation at position X<sub>4</sub> of said amino acid motif to Arg or to Lys.